Claim Listing and Amendments to the Claims

1. (currently amended) An implant for use in maintaining a desired distance between first and second bisected bone ends of a patient's ~~the~~ spinal column, said implant comprising:

(a) a body portion having a length and configured to be insertable between first and second bisected bone ends of the spinious process of a single vertebra, the body portion having an outer surface, and an inner surface defining a substantially hollow portion, the body portion further having an inner side region having an inner side length, and first and second ends which communicate with said hollow portion, the first and second ends comprising bone engaging portions, at least one of the bone engaging portions comprises surface projections to reduce slippage between the bone engaging portions and the respective said bone segment,

wherein said bone engaging portions are angled with respect to each other, and said implant is configured so as not to protrude into the spinal canal when inserted between the first and second bone ends.

2. (currently amended) The implant of claim 1 wherein the ~~intersection between the~~ inner side region is angled with respect to ~~and~~ each of the bone engaging portions ~~comprises an angle~~.

3. (original) The implant of claim 2 wherein the angle ranges from about 50 to about 70 degrees, and the inner side length ranges from about 6 to about 10 millimeters.

4. (original) The implant of claim 1 wherein the perimeter of the outer surface of the implant is a substantially geometric shape.

5. (original) The implant of claim 4 wherein the geometric shape is an ellipse having a width and a depth.

6. (original) The implant of claim 5 wherein the width ranges from about 10.0 to about 11.5 millimeters and the depth ranges from about 6.5 to about 7.5 millimeters

7. (original) The implant of claim 4 wherein the geometric shape is a circle.

8. (original) The implant of claim 1, wherein the surface projections comprise saw tooth ridges.

9. (original) The implant of claim 1 wherein the surface projections comprise individual pyramidal teeth.

10. (original) The implant of claim 1, wherein each of the first and second ends further comprises a channel configured to accept the arms of a pair of distractor pliers.

11. (original) The implant of claim 1 wherein the body portion further comprises at least one hollow suture attachment portion to enable a surgeon to secure the implant to at least one of said first and second bone segments.

12. (original) The implant of claim 1 wherein the implant is formed of a bone allograft material.

13. (original) The implant of claim 12 wherein at least one of the first and second bone engaging portions is comprised of demineralized bone.

14. (currently amended) The implant of claim 12 wherein the bone allograft material is obtained from a cross-section of a donor bone having an intermedullary canal, and wherein said inner surface of the implant is defined by the intermedullary canal of the donor bone.

15. (original) The implant of claim 12 wherein said inner surface is configured such that the volume of said substantially hollow portion is greater than the intermedullary canal of the donor bone.

16. (original) The implant of claim 1 wherein the implant is fabricated of biocompatable metal.

17. (original) The implant of claim 1 wherein the implant is fabricated of biocompatable polymer.

18. (currently amended) An implant for use in the spinal column, the implant comprising:

(a) a body portion having a width, a depth, an inner side region comprising an inner side length and configured to be insertable between first and second bone segments of a spinous process of a single vertebra, the body portion having first and second ends, at least one of the first and second ends comprising a bone engaging portion to engage at least one of the first and second bone segments, wherein the implant is formed of bone allograft material, and at least one of the first and second bone engaging portions is comprised of a demineralized allograft material.

19. (original) The implant of claim 18 wherein the body portion further comprises a wall having an outer surface, and an inner surface defining a substantially hollow portion, wherein the hollow portion is in communication with the first and second ends.

20. (currently amended) The implant of claim 19 wherein the bone allograft material is obtained from a cross-section of a donor bone having an intermedullary canal, and wherein said hollow portion is defined by the intermedullary canal of the donor bone.

21. (original) The implant of claim 19 wherein said inner surface is configured such that the volume of said substantially hollow portion is greater than the intermedullary canal of the donor bone.

22. (original) The implant of claim 18 wherein the at least one of said first and second bone engaging portions further comprises surface projections configured to retain said implant within the first and second bone segments.

23. (original) The implant of claim 22 wherein the surface projections comprise saw-tooth ridges.

24. (original) The implant of claim 22 wherein the surface projections comprise individual pyramidal teeth.

25. (currently amended) The implant of claim 18 wherein the ~~intersection between~~ the inner side region is angled with respect to ~~and~~ each of the bone engaging portions ~~comprises an angle~~.

26. (original) The implant of claim 25 wherein the angle ranges from about 50 to about 70 degrees, the inner side length ranges from about 6 to about 10 millimeters, the width

ranges from about 10 millimeters to about 11.5 millimeters, and the depth ranges from about 6.5 millimeters to about 7.7 millimeters.

27. (withdrawn) An implant for use in the spinal column, said implant comprising:
a body portion formed of allograft bone material having an inner side having an inner side length, and configured to be insertable between first and second bone segments of the spine, the body portion having first and second ends, at least one of the first and second ends comprising a bone engaging portion to engage at least one of the first and second bone segments, the at least one bone engaging portion further comprising an outer shell portion substantially surrounding a center region,
wherein the outer shell portion is cortical bone and the center region is cancellous bone.

28. (withdrawn) The implant of claim 27 wherein at least one of the bone engaging portions comprises surface projections to reduce slippage between the bone engaging portions and the respective said bone segment.

29. (withdrawn) The implant of claim 28 wherein the surface projections comprise saw tooth ridges.

30. (withdrawn) The implant of claim 28, wherein the surface projections comprise individual pyramidal teeth.

31. (withdrawn) The implant of claim 27 wherein at least one of the first and second bone engaging faces is comprised of demineralized bone.

32. (withdrawn) The implant of claim 27 wherein the intersection between the inner side and the at least one bone engaging portion comprises an angle.

33. (withdrawn) The implant of claim 32 wherein the angle ranges from about 50 to about 70 degrees, and the inner side length ranges from about 6 to about 10 millimeters.

34. (withdrawn) The implant of claim 27 wherein the body portion further comprises a hollow suture attachment portion to enable a surgeon to secure the implant to at least one of said first and second bone segments.

35. (withdrawn) An implant for use in the spinal column, said implant comprising:

(a) first and second plates connected by an intermediate portion whose thickness is smaller than the height of the first and second plates, the first and second plates comprising bone engaging portions for engaging first and second bone segments produced during a laminoplasty procedure, the first and second bone engaging portions being angled with respect to each other,

wherein the implant is configured to be insertable between first and second bone segments produced during a laminoplasty procedure.

36. (withdrawn) The implant of claim 36 wherein the first and second plates and the intermediate portion form a substantially U-shaped implant.

37. (withdrawn) The implant of claim 36 wherein the intermediate portion further comprises a hollow suture attachment portion.

38. (withdrawn) The implant of claim 36 wherein the implant is comprised of a biocompatable metal.

39. (withdrawn) The implant of claim 36 wherein the implant is comprised of a biocompatable polymer.

40. (withdrawn) The implant of claim 36 wherein at least one of the first and second bone engaging portions comprises surface projections to reduce slippage between the bone engaging portions and the respective said bone segment.

41. (withdrawn) The implant of claim 41 wherein the surface projections comprise saw tooth ridges.

42. (withdrawn) The implant of claim 41, wherein the surface projections comprise individual pyramidal teeth.

43. (withdrawn) The implant of claim 36 wherein the implant is comprised of cortical bone allograft.

44. (withdrawn) The implant of claim 43 wherein at least one of the bone engaging portions are comprised of demineralized bone.

45. (withdrawn) A method for providing a desired space in the spinal canal, comprising the

steps of:

(a) cutting at least one segment of a vertebra all the way through to produce first and second cut bone ends;

(b) cutting at least one lamina of the vertebra partially to create a hinge,

(c) providing an implant having a body portion comprising a length and a longitudinal axis, the body portion having first and second ends, the first and second ends comprising bone engaging portions,

wherein the implant is formed of a bone allograft material, and at least one of the bone engaging portions is comprised of demineralized bone;

(d) separating the first and second cut bone ends a sufficient distance to accept the implant;

(e) positioning the implant between the first and second cut bone ends; and

(f) contacting at least a portion of each of the first and second cut bone ends with the bone engaging portions.

46. (withdrawn) The method of claim 45 wherein the step of cutting comprises bisecting a spinous process.

47. (withdrawn) The method of claim 45 further comprising the step of cutting a second lamina of the vertebra partially to create a second hinge.

48. (withdrawn) A method for providing a desired distance between first and second cut bone ends of the spine comprising the steps of:

(a) cutting at least one segment of a vertebra to produce first and second cut bone ends;

(b) providing an implant comprising:

(i) a body portion formed of bone allograft material having first and second ends, the first and second ends comprising bone engaging portions, the bone engaging portions each comprising an outer shell portion and a central region, the outer shell portion substantially surrounding the central region,

wherein the outer shell portion is cortical bone and the center region is cancellous bone,

(c) separating the first and second bone ends a sufficient distance to accept the implant;

(d) placing said implant between said first and second cut bone ends; and

(e) positioning the implant between the first and second cut bone ends so as to contact at least a portion of each of the first and second cut bone ends with the bone engaging portions.

49. (withdrawn) The method of claim 48 further comprising the step of providing an implant having bone engaging portions comprising surface projections to reduce slippage between the bone engaging portions and the respective said bone ends.

50. (withdrawn) The implant of claim 49 wherein the surface projections comprise saw tooth ridges.

51. (withdrawn) The implant of claim 49, wherein the surface projections comprise individual pyramidal teeth.

52. (withdrawn) The method of claim 48 wherein the step of cutting comprises bisecting the spinous process.

53. (withdrawn) The method of claim 48 wherein the step of cutting further comprises partially cutting both laminae adjacent to the spinous process.